

Amendments to the Claim

The following listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims

1. (currently amended) A DNA construct comprising a seed-specific promoter operatively linked to a nucleotide sequence encoding ~~an amylopullulanase or a fragment of Thermoanaerobacterium ethanolicus amylopullulanase that comprises amino acids 106-1060 of SEQ ID NO:1 and is free of amino acids 1-105 and 106-1481 of SEQ ID NO:1 thereof having a~~ ~~pullulanase and α-amylase activities comprising~~.
- 2.-4. (canceled)
5. (currently amended) The construct of claim 1, ~~further comprising a wherein the~~ ~~nucleotide sequence encodes an amylopullulanase linked to encoding a signal peptide linked to the~~ ~~nucleotide sequence encoding the fragment of Thermoanaerobacterium ethanolicus~~ ~~amylopullulanase.~~
6. (original) The construct of claim 5, wherein the signal peptide is a glutelin signal peptide.
7. (currently amended) The construct of claim 1, wherein the ~~nucleic acid construct~~ further includes a 3' gene terminator sequence.
8. (original) The construct of claim 7, wherein the 3' gene terminator sequence is a nopaline synthase gene terminator sequence.
9. (original) The construct of claim 1, wherein the seed specific promoter is a glutelin promoter or an α-Amy promoter.
10. (currently amended) The construct of claim 9, wherein the ~~seed specific promoter α-~~ ~~Amy promoter~~ is the α-Amy3 or the α-Amy8 promoter.

11. (currently amended) The construct of claim 9, wherein the glutelin seed specific promoter is the *GluB* promoter.

12. (currently amended) A genetically engineered seed, comprising a seed specific promoter operably linked to a nucleotide sequence encoding an amylopullulanase or a fragment of Thermoanaerobacterium ethanolicus amylopullulanase that comprises amino acids 106-1060 of SEQ ID NO:1 and is free of amino acids 1-105 and 106-1481 of SEQ ID NO:1 thereof having a pullulanase and  $\alpha$ -amylase activities.

13.-15. (canceled)

16. (original) The seed of claim 12, wherein the genetically engineered seed is a rice, corn, wheat, or barley seed.

17. (original) The seed of claim 12, wherein the genetically engineered seed is a rice seed.

18.-19. (canceled)

20. (currently amended) The seed of claim 12, wherein the nucleotide sequence encodes an amylopullulanase linked to a signal peptide linked to the nucleotide sequence encoding the fragment of Thermoanaerobacterium ethanolicus amylopullulanase.

21. (original) The seed of claim 20, wherein the signal peptide is a glutelin signal peptide.

22. (original) The seed of claim 12, wherein the nucleotide sequence further includes a 3' gene terminator sequence.

23. (original) The seed of claim 22, wherein the 3' gene terminator sequence is a nopaline synthase gene terminator sequence.

24. (original) The seed of claim 12, wherein the seed specific promoter is a glutelin promoter or an  $\alpha$ -Amy promoter.

25. (currently amended) The seed of claim 24, wherein the glutelin seed specific promoter is the *GluB* promoter.

26. (currently amended) The seed of claim 24, wherein the  $\alpha$ -Amy seed specific promoter is the  $\alpha$ -Amy3 or the  $\alpha$ Amy8 promoter.

27. (currently amended) A method of producing seeds having a modified starch structure or content, comprising:

transforming a plant cell with a DNA construct comprising a seed specific promoter operatively linked to a nucleotide sequence encoding an amylopullulanase or a fragment of Thermoanaerobacterium ethanolicus amylopullulanase that comprises amino acids 106-1060 of SEQ ID NO:1 and is free of amino acids 1-105 and 106-1481 of SEQ ID NO:1 thereof having a pullulanase and  $\alpha$ -amylase activities;

generating a whole plant from the transformed plant cell;  
optionally multiplying the whole plant; and  
harvesting seeds from the whole plant or multiplied whole plants.

28. (original) The method of claim 27, wherein the plant cell is a rice cell.

29-31. (canceled)

32. (currently amended) A method of producing a starch having a modified structure, comprising:

transforming a plant cell with a DNA construct comprising a seed specific promoter operatively linked to a nucleotide sequence encoding an amylopullulanase or a fragment of Thermoanaerobacterium ethanolicus amylopullulanase that comprises amino acids 106-1060 of SEQ

ID NO:1 and is free of amino acids 1-105 and 106-1481 of SEQ ID NO:1 thereof having a pullulanase and  $\alpha$ -amylase activities;

generating a whole plant from the transformed plant cell;  
optionally multiplying the whole plant;  
harvesting seeds from the whole plant or multiplied whole plants; and  
extracting the starch from the seeds.

33. (original) The method of claim 32, wherein the plant cell is a rice cell.

34.- 47. (canceled)

48. (new) A DNA construct comprising a seed-specific promoter operatively linked to a nucleotide sequence encoding an amino acid sequence consisting of amino acids 106-1060 of SEQ ID NO:1.

49. (new) The construct of claim 48, further comprising a nucleotide sequence encoding a signal peptide linked to the nucleotide sequence encoding the fragment of SEQ ID NO:1.

50. (new) The construct of claim 49, wherein the signal peptide is a glutelin signal peptide.

51. (new) The construct of claim 48, wherein the seed specific promoter is a glutelin promoter or an  $\alpha$ -Amy promoter.

52. (new) The construct of claim 48, wherein the seed specific promoter is the  $\alpha$ -Amy3 or the  $\alpha$ -Amy8 promoter.

53. (new) The construct of claim 48, wherein the seed specific promoter is a *Glub* promoter.

54. (new) A genetically engineered seed comprising the construct of claim 48.

55. (new) A genetically engineered seed comprising the construct of claim 51.
56. (new) The seed of claim 54, wherein the genetically engineered seed is a rice, corn, wheat, or barley seed.
57. (new) A method of producing seeds having a modified starch structure or content, comprising:
  - transforming a plant cell with the construct of claim 48;
  - generating a whole plant from the transformed plant cell;
  - optionally multiplying the whole plant; and
  - harvesting seeds from the whole plant or multiplied whole plants.
58. (new) The method of claim 57, wherein the plant cell is a rice cell.